the shielding basket, can be more or less enclosed in the basket region.

If virtually unimpeded glass exchange is desired, the invention provides a shielding basket which has two rims, which can be connected by elements, at least one rim forming the upper boundary. This embodiment comprises, for example, a cage-like structure made up of two rings which are connected to one another by webs.

The radius of the rings may in this case differ. By way of example, one rim may be arranged at a greater distance from the opening through which the electrode passes through the wall of the unit. This rim may in particular have a smaller radius than the other rim, which then forms a lower boundary. The webs then constitute lateral boundaries of the basket, so as to form a conical shielding basket.

The rims and the elements connecting them may, however, also be dimensioned and arranged in any other desired way depending on the demands imposed on the spatial distribution of the introduction of electrical

Fig. 2 shows the power density distribution around an electrode at that surface of the wall of the melting and/or refining unit which faces the melt,

Fig. 3 shows the power density distribution around an electrode at a depth of 5 cm measured from the surface of that side of the wall of the melting and/or refining unit which faces the melt,

Fig. 4 diagrammatically depicts a longitudinal section through an electrode brick,

Fig. 5 diagrammatically depicts a longitudinal section through a first embodiment of a shielding device according to the invention,

Fig. 6 diagrammatically depicts a longitudinal section through and plan view of a second embodiment of a shielding device according to the invention,

Fig. 7 diagrammatically depicts a longitudinal section through and plan view of a further embodiment of a shielding device according to the invention,

Fig. 8 diagrammatically depicts the geometric dimensions of the shielding device according to the invention.

The problem of an excessively high current density in the intermediate space between shielding basket 22 and electrode 20 can be avoided if the shielding basket 22, as illustrated in the figures in the form of a possible electrical connection 40, is connected to the outer region 50 in a suitable way through the wall 10.

Fig. 8 illustrates relevant geometric variables of an arrangement according to the invention of the shielding device 25 for two adjacent electrodes 20. The abovementioned distance a between the electrode 20 and the inner edge of the basket 22 is indicated in this illustration. The smaller the distance a is selected to be, however, the higher the current densities in this transition region become.

The current flows on the path of least resistance from an electrode E1 of a heating circuit to the next electrode E2. Therefore, the maximum permissible current densities for the

Patent claims:

1. A unit, in particular a melting and/or refining unit and/or distributor system and/or channel system, for conductively heatable melts (30), in particular glass melts, which has a tank and at least one electrode (20), the electrode (20) passing through an opening in a wall (10) of the tank so as to be immersed in the conductively heatable melt (30), which unit has an apparatus for reducing the local introduction of heating power into at least one region - adjacent to the electrode (20) - of the wall (10), which comprises at least one shielding device (15, 25) which is arranged in a region - adjacent to the electrode (20) - of the melt (30) and comprises a shielding basket (22).

2. The unit as claimed in claim 1, wherein the shielding device (15) is arranged in a region - adjacent to the electrode (20) - of the wall (10).

3. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) has an opening (26) through which the electrode (20) can be passed, the perpendicular through the opening (26) defining the axis of the shielding basket.

4. The unit as claimed in one of the preceding claims, wherein the opening (26) in the shielding basket (22) is arranged in an upper boundary (24) of the shielding basket (22).

5. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) is arranged coaxially with respect to an electrode (20).

6. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) is rotationally symmetrical in form.

7. The unit as claimed in one of the preceding claims, wherein the upper boundary (24) of the shielding basket (22) is formed integrally.

8. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) has two rims (27, 28), which can be connected by elements (29), at least one rim forming the upper boundary (24).

9. The unit as claimed in one of the preceding claims, wherein the longitudinal axis of the elements (29) includes an angle W with the surface (18), facing the melt (30), of the region - adjacent to the electrode (20) - of the wall (10).

10. The unit as claimed in claim 9, wherein the angle W has a value in the range from $0° < W \leq 90°$.

11. The unit as claimed in claim 10, wherein the angle W has a value in the range from $30° \leq W \leq 60°$.

12. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) can be secured to the electrode (20).

13. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) can be secured to the wall (10).

14. The unit as claimed in one of the preceding claims, wherein the shielding basket (22) comprises Mo and/or W and/or SnO_2 and/or at least one precious metal and/or at least one alloy of the abovementioned materials and/or high-temperature-resistant steels.

15. The unit as claimed in one of the preceding claims, wherein the ratio of the length of the electrode body L_{EK} which is immersed in the melt to the height H_K of the shielding basket (22) has a value in the range from $1 \leq L_{EK}/H_K \leq 20$.

16. The unit as claimed in one of the preceding claims, wherein the ratio of the length of the electrode body L_{EK} which is immersed in the melt to the height H_K of the shielding basket (22) has a value in the range from $2 \leq L_{EK}/H_K \leq 5$.

17. The unit as claimed in one of the preceding claims, wherein the ratio of the outer radius R_K of the shielding basket (22) to the radius R_{EL} of the electrode body has a value in the range from $2 \leq R_K/R_{EL} \leq 15$.

18. The unit as claimed in one of the preceding claims, wherein the ratio of the outer radius R_K of the shielding basket (22) to the radius R_{EL} of the electrode body has a value in the range from $3 \leq R_K/R_{EL} \leq 7$.

19. The unit as claimed in one of the preceding claims, wherein the ratio of the distance D_{HK} between two electrodes to the outer radius R_K of the shielding basket (22) has a value in the range from $3 \leq D_{HK}/R_K \leq 500$.

20. The unit as claimed in one of the preceding claims, wherein the ratio of the distance D_{HK} between two electrodes

to the outer radius R_K of the shielding basket (22) has a value in the range from $20 \leq D_{HK}/R_K \leq 80$.

21. The unit as claimed in one of the preceding claims, wherein the width l_K of the upper rim of the shielding basket (22) is in the range from $0 \leq l_K \leq R_K$.

22. The unit as claimed in one of the preceding claims, wherein the width l_K of the upper rim of the shielding basket (22) is in the range from $0 \leq l_K \leq 1/3 \cdot R_K$.

23. The unit as claimed in one of the preceding claims, wherein the width a of the gap between electrode body and inner boundary of the opening (26) in the shielding basket (22) is in the range from $0 \leq a \leq 50$ mm.

24. The unit as claimed in one of the preceding claims, wherein the width a of the gap between electrode body and inner boundary of the opening (26) in the shielding basket (22) is in the range from $0 \leq a \leq 30$ mm.

25. The unit as claimed in one of the preceding claims, wherein the material thickness d_K of the components of the shielding basket (22) is in the range from 5 mm $\leq d_K \leq 50$ mm.

26. The unit as claimed in one of the preceding claims, wherein the width b_{Sp} of the gap between electrode body and inner boundary of the opening in the wall (10) is in the range from 1 mm $\leq b_{Sp} \leq 30$ mm.

27. The unit as claimed in one of the preceding claims, wherein the width b_{Sp} of the gap between electrode body and inner boundary of the opening in the wall (10) is in the range from 2 mm $\leq b_{Sp} \leq 5$ mm.

28. The unit as claimed in one of the preceding claims, wherein the thickness D_{FF} of the material of the wall (10) which is in contact with the melt (30) is in the range from 50 mm $\leq D_{FF} \leq$ 500 mm.

29. The unit as claimed in one of the preceding claims, wherein the thickness D_{FF} of the material of the wall (10) which is in contact with the melt (30) is in the range from 100 mm $\leq D_{FF} \leq$ 300 mm.

30. The use of an apparatus for reducing the local introduction of heating power into at least one region - adjacent to the electrode (20) - of the wall (10), as described in one of the preceding claims, during operation of a unit for conductively heatable melts (30), in particular glass melts.